Distr.
GENERAL

PBC.9/6
18 February 1993

United Nations Industrial Development Organization

ORIGINAL: ENGLISH

Programme and Budget Committee

Ninth session
Vienna, 26 - 30 April 1993
Item 12 of the provisional agenda

COMPUTERIZATION PROGRAMME OF UNIDO

Report by the Director-General

Summary

In compliance with General Conference decision GC.4/Dec.18, paragraph (h), updates to 31 December 1992 information provided in document IDB.10/30 on action taken on implementation of the recommendations of the External Auditor, Touche Ross Management Consultants and Andersen Consulting.

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Introduction

1. The General Conference in its decision GC.4/Dec.18, inter alia, took note of the updated report by the External Auditor on the electronic data-processing (EDP) system (GC.4/50), of the follow-up report by the Director-General on the recommendations of the External Auditor (GC.4/48 and Corr.1) and of the final report of Touche Ross Management Consultants (GC.4/CRP.1). In the same decision the General Conference requested the Director-General, inter alia, to report to subsequent sessions of the policy-making organs on the programme and cost of implementing the consultants' recommendations (GC.4/CRP.1) and those of the External Auditor (GC.4/50).

2. In compliance with that decision, information was provided to the Board at its tenth session regarding the status of action taken with respect to those recommendations as of 30 September 1992. The present report provides an update as of 31 December 1992 on action taken with respect to the recommendations of Touche Ross Management Consultants (GC.4/CRP.1) and those of the External Auditor (GC.4/50 and IDB.10/4-PBC.8/9, paras. 153-180) and the recommendations that resulted from phase two of the Strategic Automation Plan for UNIDO in the report of Andersen Consulting.

3. Annex I provides those details based on the recommendations of the two external consultancies. Annex II contains the recommendations of the External Auditor and the most recent action taken to implement them. Those recommendations which have been fully implemented as reported in document IDB.10/30 are not included. Annex III shows the total 1992 cost of implementing that programme as well as all 1992 contractual commitments.

4. In accordance with paragraph (i) of decision GC.4/Dec.18 in which the General Conference requested the Director-General to keep Member States fully apprised of the EDP programme, a briefing on the subject took place on 23 October 1992. The next briefing is scheduled for the first quarter 1993.

INDIANA UNIVERSITY

V.93 82031 4649E

Distr.: 3 March 1993

Annex I

STATUS OF ACTION TAKEN ON PRIMARY RECOMMENDATIONS OF TOUCHE ROSS MANAGEMENT CONSULTANTS[1] AND OF ANDERSEN CONSULTING[2]

PRIMARY RECOMMENDATIONS	CURRENT STATUS
1. There is a need for a systematic review of procedures within UNIDO. This review must come about from a management initiative and cannot be led by EDP. There is too much duplication of effort and too much reliance on paper-based methods. (8.1.2)	1. As reported in IDB.10/30, the Department of Administration is streamlining its procedures with the primary focus on eliminating duplication of effort and reducing paper flow. Revision of a number of procedures is under way and has resulted so far in the simplification of accounting voucher processing as well as the control of technical cooperation obligations. As new changes materialize, a statement on the impact of such streamlining will be the subject of future updated reports.
2. Charge codes for use of computer time should be set up, at a level low enough to ensure the collection of meaningful statistics, to be used as the basis for charging users. (8.1.1)	2. Previously reported. Could be eliminated from future updated reports.
3. An information technology steering group should be created. This Group should ensure that distraction of EDP from their main task is minimized. (8.1.1)	3. Previously reported. Could be eliminated from future updated reports.
4. The information technology steering group should identify and sanction any proposed changes to packages. (8.1.3)	4. In the course of implementing the recommendations of Touche Ross and Andersen Consulting, additional products are required in order to fully utilize the features of ADABAS and NATURAL. Consequently, a request for acquisition of additional software packages and for the replacement of some other packages was presented by the Management Information Services Division (MIS) to the Information Technology Steering Committee (ITSC) and endorsed by ITSC. The packages will enhance the productivity of applications developers and will guarantee protection of source programs and screen maps from accidental or intentional deletion or corruption.
5. Extensive training of EDP will be required in the use of new methods and tools. (8.1.3)	5. As a follow-on of the course on the Structured Systems Analysis and Design Methodology (SSADM) and Computer Aided Software Engineering (CASE) tools conducted in September 1992, application of the methodology to new development projects has been initiated. This will provide the practical experience required to train additional staff in the use of the methodology and tools. Training of MIS staff will be one of the subjects to be discussed in the planned second 1993 meeting of the ITSC. MIS staff are required to attend seminars and courses for new technology and additional tools that will improve their productivity to develop systems and permit the re-assignment of responsibilities. Special training is encouraged for selected staff.

[1] Reference in the column "Primary recommendations" refer to sections of the final report of Touche Ross (GC.4/CRP.1).

[2] Strategic Automation Plan - Phase 2 Final Report, Vienna, 16 June 1992.

6. Further investment in current systems should be avoided. Maintenance of existing systems must be restricted to changes which are absolutely essential, even if this will undoubtedly lead to dissatisfaction in the user community. The commitment of management is vital to maintain the support and understanding of the user community during this difficult period. (8.1.3)	6. A work plan for 1993 has been prepared by MIS and endorsed by ITSC. A presentation on the work planning process was included in the October 1992 briefing of Member States. It allocates the minimum human resource requirements to keep existing systems running and includes a number of new projects to establish a secure, controlled operational and support environment and to prepare MIS for the future by adjusting to the changes in technology. However, the total identified workload for 1993, including those projects recommended by Andersen Consulting to begin in 1993, adds up to approximately twice the resources available. As a consequence, only a limited number of activities in the form of new application development projects can be addressed. In view of this, ITSC has established a subcommittee to review the priorities in the Andersen report in order to select the information systems that best contribute to the business processes of the Organization at the present time, and to assist MIS in the further business analysis of such information systems.
7. The use of package application software should be viewed as a primary source of new systems. (8.1.3) The option of obtaining a suitable package should be considered first and, only after dismissing this possibility should the option of developing in-house be considered. (8.3.1) Packages should only be chosen where the amount of customization needed can be kept to a minimum. (8.3.1) Changes to packages should be kept to a minimum and reflect only changes which are essential. (8.1.3)	7. During the last quarter of 1992, MIS had undertaken a pilot project to study the possibility of implementing a package application software to carry out UNIDO's requisition and purchase order processing. The feasibility study indicated that the investment in both hardware and software was prohibitively expensive, and it would be extremely difficult to integrate it with the other financial systems already in place.
8. If FINSYS/PERSYS of FAO is put in place and modifications are needed, these should be contracted out, together with future maintenance, to a third party software house rather than build another skill set within UNIDO. (8.3.1)	8. Andersen Consulting had recommended that the FAO system should not be considered for implementation in UNIDO because it is based on an outdated platform and is also maintenance intensive. Based on the Andersen report, MIS is liaising with the project team responsible for the design and development of the Integrated Management Information System (IMIS) at United Nations New York. The full implementation of IMIS is expected to be available at United Nations headquarters from 1994 onwards and subsequently other agencies interested in IMIS will be able to obtain it. MIS is closely following related developments.
9. Parallel running is essential in the transitional period of testing a new system. Users and EDP have to support and operate both systems. This requires an increased amount of effort from all parties. (8.1.3)	9. Reported in IDB.10/30.
10. EDP will need to have in place a formal process for managing development projects, analysing user requirements and for turning the requirements into quality applications. (8.2) For this, the PRINCE methodology should be used and PRINCE project boards put in place. (8.2.1) UNIDO should acquire a project management tool, running on a PC, to assist in the control of projects. (8.2.1) UNIDO should acquire a methodology to provide EDP with a clear structure for development and give a list of tasks to be performed at each stage in the systems development life-cycle: strategic systems planning, tactical systems planning, systems analysis and logical design, selection of packages, building of custom-written systems, systems implementation. Automated tools should also be acquired to support the analysis and design stages (CASE tools). (8.2.2)	10. The methodology recommended by Andersen Consulting to facilitate more cost-effective project management has been implemented for development of new systems. Subsequent to the pilot projects carried out together with the consultants, analysis and design for another project was completed. The experience gained through these projects shows that the underlying methodology gives a well-defined framework for critical activities of applications development. The software tool acquired not only supports the methodology but also facilitates communication with the users, especially in the analysis phase. The methodology will be utilized for all future applications development projects in MIS.

11. DB2, CSP, AS, C, Fortran, Oliver and the VM products should be cancelled. ADABAS and NATURAL should become the strategic database products of UNIDO. (8.3.1, appendix II)	11. Previously reported. Could be eliminated from future updated reports.
12. No further new development work should be carried out using ADS1. (8.3.1)	12. Previously reported. Could be eliminated from future updated reports.
13. Better communications with the field need to be put in place. In the long-term, if and when it can be cost-justified, computer-based communications can be considered. (8.1.1)	13. As reported in IDB.10/30, Andersen Consulting defined a project to plan further investments in communications links based on the requirements of the Organization and taking into account the facilities already available in most countries. This project was considered as part of the work plan for 1993. Owing to staff resource constraints, the major activities may begin in 1994. More end-user information on existing facilities will be provided in the first half of 1993.
14. The cabling programme should be resumed with the wiring of six floors in 1992-1993 and the remainder in 1994-1995. Priority should be given to those floors with greatest needs. (8.3.2)	14. As reported in IDB.10/30, two floors were cabled in 1992 and it is planned to cable two additional floors in 1993. Only eight floors will then remain to be cabled in future bienniums.
15. PCs in EPL/LD must be connected by means of a LAN. (8.3.2) The Wang VS processors should be phased out in approximately two years. (8.3.2, 8.3.3)	15. Phasing out of Wang equipment and full conversion to PC and LAN technology can be contemplated when sufficient funds are available for the acquisition of hardware, software, and training required. The United Nations has pressed strongly to assume the administration of this programme in the course of the 1994-1995 biennium. Under the assumption that UNOV may assume management responsibility for this programme, UNIDO has proposed to negotiate a business plan that will permit a timely and sound implementation of the conversion. Therefore, the previously estimated budget item for a full conversion ($460,000) is no longer included in the UNIDO proposed programme and budgets, 1994-1995.
16. To remove the Wang systems it will be necessary to adopt a standard of WordPerfect across UNIDO. (8.3.3)	16. Reported in IDB.10/30.
17. PCs with WordPerfect must be provided to all staff who rely upon Wang for word processing. Adequate training in WordPerfect must be provided. (8.3.3)	17. Status as reported in IDB.10/30 and under recommendation number 15 above.
18. The acquisition of 90 PCs per biennium should go a long way towards satisfying UNIDO needs. (8.3.2)	18. Based on the available budget for acquisition of desktop equipment and software in the 1992-1993 biennium, on the requirements of the Departments and on the priorities of information systems, ITSC has endorsed a plan for acquisition and distribution of some 70 PCs and a similar number of printers in early 1993. It is envisaged that a similar number can be acquired in future bienniums, but as pointed out in IDB.10/30, owing to budgetary constraints only 5 per cent of the acquired hardware can be used to replace obsolete, ageing and malfunctioning equipment. A future replacement strategy will be prepared by MIS and presented to ITSC in 1993.

Annex II

STATUS OF ACTION TAKEN ON
RECOMMENDATIONS OF THE EXTERNAL AUDITOR

PRIMARY RECOMMENDATIONS	CURRENT STATUS
1. A system should be established to spread all EDP non-staff costs among different user Departments. (GC.4/50, paras. 12, 45, 46)	1. As reported in IDB.10/30, a system to distribute non-staff costs to Departments is in place. A work plan for 1993 has been prepared by MIS and endorsed by ITSC. Since January 1993 MIS staff has charged time worked against the different projects and activities in the work plan. Based on that time reporting it is envisaged that a system to distribute MIS staff costs may be implemented.
2. There is a need for other external consultancy services in order to proceed with implementation of the more technical Touche Ross recommendations as well as for other technical and organizational issues. (GC.4/50, paras. 15, 39, 61)	2. Previously reported. Could be eliminated from future updated reports.
3. A disaster recovery plan should be worked out which would enable both UNIDO and IAEA to mutually provide a backup computer installation at no additional costs. (GC.4/50, paras. 16, 62-65)	3. Status as reported in IDB.10/30.
4. An information technology steering group should be established. (GC.4/50, paras. 17, 66-70)	4. Previously reported. Could be eliminated from future updated reports.
5. A system for managing, controlling and auditing automation projects should be introduced. (GC.4/50, paras. 18, 71-75)	5. Further to the status reported in IDB.10/30, projects have been identified, resources allocated and the 1993 work plan endorsed by ITSC and approved by management. Based on the recommendation of the consultants and supported by the use of a commercial project management tool, the system of procedures to manage automation projects is being put in place.
6. While UNIDO is making a major investment in modern information processing technology and techniques it is of vital importance for the realization of the Organization's goals to benefit as soon as possible from that investment without supplementary costs. This can be achieved mainly by increasing the efficiency and effectiveness of data processing and distribution. (IDB.10/4, para. 177)	6. Previously reported. Could be eliminated from future updated reports.
7. A major objective should be intensive training of the existing EDP staff in the use of modern data-processing techniques and tools, and of the end-users regarding the relevant applications and software packages. (IDB.10/4, para. 178)	7. Status reported under recommendation No. 5, annex I.
8. Standards should be established and complied with, throughout the Organization as a whole, regarding the use of software packages (i.e. word processing, database products, spreadsheets) thus enabling the transfer of any document without conversion problems and/or duplication of efforts. (IDB.10/4, para. 179)	8. One of the aims of the recent reorganization of MIS is to have staff available for the drafting of necessary standards. As reported in IDB.10/30, ITSC has already endorsed standards regarding hardware and basic software. New proposals regarding LAN software, minimum hardware configurations for future acquisition and an improved information link between mainframe and PC platforms are planned to be presented to ITSC for endorsement.
9. It is also of great importance that EDP-staff as well as the end-users will be highly motivated to accept the (new) tools and applications as a valuable support to their work. This applies to UNIDO staff at Headquarters as well as for field staff. (IDB.10/4, para. 180)	9. With ITSC as the appropriate body to accept tools, applications and training, combined with improved documentation covering existing applications and services as well as with the establishment of user liaisons or focal points within the Secretariat, it is expected that the required high motivation level will be maintained.

Annex III

COST OF IMPLEMENTATION, 1 JANUARY - 31 DECEMBER 1992

(In US dollars at US$ 1 = AS 12.90)

	1992 allotments	Disbursements 01/01 - 31/12/92	Obligations	Expenditure (2 + 3)	Balance (1 - 4)
	(1)	(2)	(3)	(4)	(5)
Staff costs	1,911,300	1,890,078	16,602	1,906,680	4,620
Income	(140,200)	(130,252)	-	(130,252)	(9,948)
Mainframe					
Hardware	853,200	740,933	72,330	813,263	39,937
Software	693,200	689,946	2,576	692,522	678
Operation and maintenance	1,057,300	1,057,300	-	1,057,300	-
Office automation					
Hardware	558,600	399,818	67,398	467,216	91,384
Software	51,000	22,796	12,012	34,808	16,192
Maintenance	376,600	293,952	60,118	354,070	22,530
Other					
Supplies and materials	256,000	73,818	83,765	157,583	98,417
Network	155,400	65,323	59,482	124,805	30,595
External computer costs	20,000	15,953	2,135	18,088	1,912
Training	143,100	146,046	2,806	148,852	(5,752)
Consultancy support	100,000	65,856	-	65,856	34,144
Software development	77,500	51,464	608	52,072	25,428
Printing and reproduction	300	164	-	164	136
Income	(160,000)	(177,551)	-	(177,551)	17,551
TOTAL	5,953,300	5,205,644	379,832	5,585,476	367,824

Notes:

1. Allotments represent the 1992 portion of 1992-1993 appropriations excluding inflation on non-staff costs.

2. Obligations include contractual commitments for 1992.

Annex IV

CONTRACTUAL COMMITMENTS, 1 JANUARY - 31 DECEMBER 1992

(In US dollars at US$ 1 = AS 12.90)

Contract number	Supplier	Description	Period	1992	1993	1994	1995	Total
92/319	IBM	Mainframe leasing	07/02/89-30/06/94	790,698	790,698	2,435,594	-	4,016,990
92/295	IBM	Software licence	07/02/89-31/12/94	456,205	456,205	456,205	-	1,368,615
92/303	IBM	Facilities Management	01/07/90-31/12/94	1,057,302	1,057,302	1,057,302	-	3,171,906
92/300	IBM	Token ring network	07/02/89-31/12/94	14,056	14,056	14,056	-	42,168
92/230	IBM	Computer manuals	01/01/92-31/12/92	7,054	-	-	-	7,054
92/318	Olivetti	Leasing of 100 PCs	01/01/89-30/09/93	100,279	75,209	-	-	175,488
92/291	Olivetti	Leasing of printers	01/10/89-30/09/93	60,694	45,520	-	-	106,214
92/345	Olivetti	Maintenance and repair of Olivetti PCs	01/01/92-29/02/92	26,849	-	-	-	26,849
92/284	Wang	Leasing of PCs and printers	01/03/90-28/02/94	70,750	70,750	11,790	-	153,290
92/292	Dataservice	Lease of PCs	01/04/89-31/05/93	15,005	5,660	-	-	20,665
92/321	MBA	Lease of PCs	12/12/89-31/12/93	16,477	16,477	-	-	32,954
92/302	Rank Xerox	Maintenance/copier/ RX4090 printer	01/07/90-open-ended	62,065	-	-	-	62,065
92/224	Rank Xerox	Rental/maintenance/ copier RX4050 printer	01/01/91-open-ended	97,387	-	-	-	97,387
92/327	Rank Xerox	Rental - 2x4046 printer	04/04/89-open-ended	6,716	-	-	-	6,716
92/320	Rank Xerox	EPIC and HFDL software maintenance	01/12/89-open-ended	2,944	-	-	-	2,944
92/346	Rank Xerox	Cost of prints for laser printers	01/01/92-31/12/92	34,884	-	-	-	34,884
92/347	Rank Xerox	Maintenance of laser printers	01/01/92-31/03/92	7,581	-	-	-	7,581
92/348	Rank Xerox	Maintenance of laser printers	01/01/92-31/03/92	800	-	-	-	800
92/299	Candle	Omegamon software maintenance	01/07/89-open-ended	18,412	-	-	-	18,412
92/306	Computer Associates	Librarian MVS software maintenance	04/12/89-open-ended	22,133	-	-	-	22,133
92/288	APT	Oliver software maintenance	11/12/89-open-ended	6,089	-	-	-	6,089
92/307	SAS Heidelberg	SAS base system and utilities	01/04/90-open-ended	50,090	-	-	-	50,090
92/245	SAS Heidelberg	Computer manuals	01/01/92-31/12/92	4,884	-	-	-	4,884
	Subtotal			2,929,354	2,531,877	3,974,947	-	9,436,178

Contract number	Supplier	Description	Period	1992	1993	1994	1995	Total
Balance				2,929,354	2,531,877	3,974,947	-	9,436,178
92/296	Software AG	ADABAS maintenance	28/12/89-open-ended	45,888	-	-	-	45,888
92/246	Software AG	Computer manuals	01/01/92-31/12/92	4,806	-	-	-	4,806
92/231	General Electric	Geisco service	01/01/92-31/12/92	11,628	-	-	-	11,628
92/248	Gammag	Maintenance and repair Wang master CPUs	01/01/92-31/12/92	52,656	-	-	-	52,656
92/248	Gammag	Wang software support	01/01/92-31/12/92	13,029	-	-	-	13,029
92/307	IAEA	Computer usage	07/02/89-open-ended	4,651	-	-	-	4,651
92/229	IAEA	Maintenance of LTCs	01/01/92-31/12/92	7,643	-	-	-	7,643
92/229	IAEA	Rental of LTCs	01/01/92-31/12/92	10,060	-	-	-	10,060
92/297	University of Vienna	EARN participation	01/01/92-31/12/92	7,442	-	-	-	7,442
92/309	International Computing Centre, Geneva	Participation	01/01/92-31/12/92	16,000	-	-	-	16,000
92/311	Telerate	Financial market information	01/01/92-31/12/92	7,209	-	-	-	7,209
92/314	PTT	Rental and use of line	01/01/92-31/12/92	1,163	-	-	-	1,163
92/232	PTT	Rental and use of line	01/01/92-31/12/92	19,690	-	-	-	19,690
92/233	Radio Austria	Rental and use of line	01/01/92-31/12/92	1,163	-	-	-	1,163
92/234	PTT	Rental and use of line	01/01/92-31/12/92	9,302	-	-	-	9,302
92/235	Radio Austria	Rental and use of line	01/01/92-31/12/92	2,326	-	-	-	2,326
92/236	PTT/Radio Austria	Rental and use of line	01/01/92-31/12/92	349	-	-	-	349
92/237	PTT	Rental and use of line	01/01/92-31/12/92	698	-	-	-	698
92/212	Prager Consult	Training	01/01/92-30/06/92	96,613	-	-	-	96,613
92/212	Prager Consult	Training	15/09/92-30/03/93	26,809	42,242	-	-	69,051
92/422	Elektro Polst	Cabling of floors D-18	07/10/92-23/12/92	46,111	-	-	-	46,111
92/405	Share Europe	Membership fee	01/07/92-31/12/92	400	-	-	-	400
92/251	Andersen Consulting	Consultancy	Dec.1991-31/12/92	65,000	-	-	-	65,000
92/349	TSG	Maintenance/repair of UNIDO computer equipment	01/01/92-31/03/92	56,203	-	-	-	56,203
92/339	Alcatel	Leasing of 12 PCs	01/01/92-31/05/92	5,863	-	-	-	5,863
92/350	Maschinda	Maintenance of bar code reader (UNIDO portion)	01/01/92-31/12/92	914	-	-	-	914
92/352	Gammag	Repairs and maintenance	1992	1,482	-	-	-	1,482
92/353	Software AG	Repairs and maintenance	1992	62	-	-	-	62
92/358	Anglo Elementar	Repairs and maintenance	1992	33	-	-	-	33
92/377	Anglo Elementar	Repairs and maintenance	1992	189	-	-	-	189
92/382	EDV Software AG	Software	1992	3,625	-	-	-	3,625
92/382	EDV Software AG	Software	1992	1,741	-	-	-	1,741
92/386	Anglo Elementar	Spares	1992	33	-	-	-	33
92/388	Rank Xerox	Maintenance of computer equipment	1992	1,484	-	-	-	1,484
92/389	Rank Xerox	Maintenance of computer equipment	1992	1,843	-	-	-	1,843
92/390	Gammag	Maintenance of computer equipment	1992	1,893	-	-	-	1,893
	Subtotal			3,455,355	2,574,119	3,974,947	-	10,004,421

Contract number	Supplier	Description	Period	1992	1993	1994	1995	Total
Balance				3,455,355	2,574,119	3,974,947	-	10,004,421
92/393	Computer Associates	Software licence fee	1992	3,256	-	-	-	3,256
92/397	Gammag	Maintenance	1992	1,008	-	-	-	1,008
92/398	Gammag	Maintenance	1992	4,933	-	-	-	4,933
92/402	Rank Xerox	Repairs and maintenance	1992	3,552	-	-	-	3,552
92/403	Gammag	Repairs and maintenance	1992	4,960	-	-	-	4,960
92/410	Candle	Maintenance and repairs	1992	10,853	-	-	-	10,853
92/411	Gammag	Repairs	1992	6,327	-	-	-	6,327
92/412	SRS	Repairs	1992	1,039	-	-	-	1,039
92/415	Experteam	Training	1992	9,922	-	-	-	9,922
92/419	Alcatel	Repairs and maintenance	1992	2,319	-	-	-	2,319
92/420	Gammag	Repairs	1992	3,708	-	-	-	3,708
92/421	Rank Xerox	Repairs	1992	89	-	-	-	89
92/425	Data Transport Systems	Consultancy	1992	4,000	-	-	-	4,000
92/425	Data Transport Systems	Consultancy	1992	2,000	-	-	-	2,000
92/426	EDV Software	Software licence	1992	28,130	-	-	-	28,130
92/430	Rank Xerox	Repairs and maintenance	1992	253	-	-	-	253
92/431	Schiessel	Repairs and maintenance	1992	380	-	-	-	380
92/432	Rank Xerox	Repairs and maintenance	1992	819	-	-	-	819
92/433	Gammag	Repairs and maintenance	1992	5,083	-	-	-	5,083
92/434	Gammag	Repairs and maintenance	1992	7,860	-	-	-	7,860
92/439	Gammag	Repairs and maintenance	1992	7,864	-	-	-	7,864
	TOTAL			3,563,710	2,574,119	3,974,947	-	10,112,776

Abbreviations

CPU	Central processing unit
LTC	Local terminal controller
PC	Personal computer